

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) A method for tracking and summarizing modified references in a garbage collector operating concurrently with applications, wherein a generation is partitioned in to a group of memory sections and wherein there are card table indicators associated with the group of memory sections storing if an application has written into or dirtied one or more of the memory sections, the method comprising the steps of:
 - finding and atomically interrogating the indicators and finding at least one dirty indicator,
 - resetting the at least one found dirty indicator to indicate not dirty,
 - scanning the at least one dirtied memory section and updating the card table indicators or remembered sets of corresponding objects, wherein updating the card table indicators or remembered sets of corresponding objects comprises storing, in the card table indicators or remembered sets, at least one location of referencing objects that reference the corresponding objects,
 - atomically interrogating the indicators again, and if none are dirty moving on to collect a next scheduled group of memory sections, and
 - if at least one indicator is dirty, preserving the indicators as just interrogated before moving on to another group of memory sections distant from the next scheduled group.
2. (Original) The method of claim 1 further comprising the step of preserving information of references to a one younger generation.
3. (Original) The method of claim 1 wherein the step of atomic interrogating comprises executing an instruction selected from the groups consisting of a compare-and-swap, a load-store-unsigned-byte, and the pair of instructions, load-locked and store-conditional.
4. (Original) The method of claim 1 wherein the step of resetting of the dirty indicators comprises setting the dirty indicator to empty before scanning.

5. (Original) The method of claim 1 wherein a dirty indicator contains all zeros and an empty indicator contains all ones.
6. (Currently Amended) The method of claim 1 wherein each indicator[[s]] comprises a byte.
7. (Original) The method of claim 1 wherein the memory sections are defined as cards and the indicators comprise a card table of bytes that correspond to the memory cards.
8. (Currently Amended) A computer system for tracking and summarizing modified references in a garbage collector operating concurrently with applications, wherein a generation is partitioned in to a group of memory sections and wherein there are card table indicators associated with the group of memory sections storing if an application has written into or dirtied one or more of the memory sections, the system comprising:
 - means for finding and atomically interrogating the indicators and finding at least one dirty indicator,
 - means for resetting the at least one found dirty indicator to indicate not dirty,
 - means for scanning the at least one dirtied memory section and updating the card table indicators or remembered sets of corresponding objects, wherein updating the card table indicators or remembered sets of corresponding objects comprises storing, in the card table indicators or remembered sets, at least one location of referencing objects that reference the corresponding objects,
 - means for atomically interrogating the indicators again, and if none are dirty moving on to collect a next scheduled group of memory sections, and
 - if at least one indicator is dirty, [[and]] means for preserving the indicators as just interrogated before moving on to another group of memory sections distant from the next scheduled group.
9. (Original) The system of claim 8 further comprising means for preserving information of references to a one younger generation.
10. (Currently Amended) The system of claim 8 wherein the means for atomically interrogating comprise[[s]] an instruction selected from the groups consisting of a compare-and-swap, and load-store-unsigned-byte, and the pair of instructions, load-locked and store-conditional.

11. (Currently Amended) The system of claim 8 wherein the means for resetting the dirty indicators comprise[[s]] means for setting the dirty indicators to empty before scanning.
12. (Original) The system of claim 8 wherein a dirty indicator contains all zeros and an empty indicator contains all ones.
13. (Original) The system of claim 8 wherein each indicator comprises a byte.
14. (Original) The system of claim 8 wherein the memory sections are defined as cards and the indicators comprise a card table of bytes that correspond to the memory cards.
15. – 21. (Canceled)
22. (Currently Amended) A computer readable media comprising: the computer readable media containing instructions for execution in a processor for the practice of a method for tracking and summarizing modified references in a garbage collector operating concurrently with applications, wherein a generation is partitioned in to a group of memory sections and wherein there are card table indicators associated with the group of memory sections storing if an application has written into or dirtied one or more of the memory sections, the method comprising the steps of:
 - finding and atomically interrogating the indicators and finding at least one dirty indicator,
 - resetting the at least one found dirty indicator to indicate not dirty,
 - scanning the at least one dirtied memory section and updating the card table indicators or remembered sets of corresponding objects, wherein updating the card table indicators or remembered sets of corresponding objects comprises storing, in the card table indicators or remembered sets, at least one location of referencing objects that reference the corresponding objects,
 - atomically interrogating the indicators again, and if non are dirty moving on to collect a next scheduled group of memory sections, and
 - if at least on indicator is dirty, preserving the indicators as just interrogated before moving on to another group of memory sections distant from the next scheduled group.

23. (Currently Amended) The computer readable media of claim 22 further comprising media containing instructions for the practice of the step of preserving information of references from at least one younger generation.
24. (Currently Amended) The computer readable media of claim 22 wherein the step of atomically interrogating comprises executing an instruction selected from the groups consisting of a compare-and-swap, and load-store-unsigned-byte, and the pair of instructions, load-locked and store-conditional.
25. (Original) The computer readable media of claim 22 wherein the step of resetting of the dirty indicators comprises setting the dirty indicators to empty before scanning.
26. (Original) The computer readable media of claim 22 wherein a dirty indicator contains all zeros and an empty indicator contains all ones.
27. (Original) The computer readable media of claim 22 wherein the indicators comprise a byte.
28. (Original) The computer readable media of claim 22 wherein the memory sections are defined as cards and the indicators comprise a card table of bytes that correspond to the memory cards.